

Research and Practice Innovations

Evaluation of a Breastfeeding Peer Support Program for Fathers of Hispanic Participants in a Texas Special Supplemental Nutrition Program for Women, Infants, and Children

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ABSTRACT

A mother's decision to breastfeed and the duration of breastfeeding depends on different factors; among them are the support of her husband or male partner and other social support. There have been different types of support programs for mothers and few have targeted fathers. In 2002, the Texas Special Supplemental Nutrition Program for Women, Infants, and Children introduced an innovative approach for encouraging breastfeeding among mothers and their spouses. The pilot Peer Dad Program targeted fathers to promote and support their spouse in breastfeeding. This cohort study evaluated duration of breastfeeding among Hispanic couples who enrolled in the pilot Peer Dad Program ($n=101$) and those who did not enroll ($n=99$). Structured interviews were conducted with Special Supplemental Nutrition Program for Women, Infants, and Children participants and their male partners. Unconditional logistic regression was used to estimate the likelihood of continuing breastfeeding past 6 months associated with participation in the Peer Dad Program and significant predictors. Mothers whose partner participated in the pilot Peer Dad Program were no more likely to continue breastfeeding past 6 months (odds ratio 1.44, 95% confidence interval 0.82 to 2.54) compared with mothers who received peer counseling only. The percentage of women in the intervention group (63.4%) who breastfed for 6 months or longer compared with women in the control group (54.6%) was not

significant ($P=0.20$). Although other studies suggest that father's support lengthens breastfeeding duration, our study, which targeted Hispanic fathers, found no association due to its small sample size. Further research with larger studies is needed to establish this association. *J Am Diet Assoc.* 2010;110:1696-1702.

In 2008, although a higher percentage of Hispanic (37.9%) mothers than non-Hispanic white (20.7%) or black (20.2%) mothers reported breastfeeding for at least 6 months (1), all percentages were considerably lower than the Healthy People 2010 goal of 50% (2). Results from studies suggest that Hispanic mothers are more aware of the benefits of breastfeeding, are more concerned with milk supply and breast refusal, and are more likely to initiate and continue breastfeeding than white and African-American mothers (3,4). However, potential barriers to breastfeeding duration among Hispanic mothers include perceptions of milk insufficiency and infant breast refusal, concerns about breast discomfort and breastfeeding in public, and the need to return to work (3,4). The US Department of Health and Human Services Blueprint for Action on Breastfeeding (5) recommends increasing the availability of peer counselors to support mothers in breastfeeding, and educating fathers on their supportive role in breastfeeding.

An integral part of the federally funded Texas Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), which offers nutrition services to low-income pregnant and postpartum women, and their children under age 5 years, is its Peer Counselor Program. Peer counselors are experienced breastfeeding mothers who provide counseling and act as role models for pregnant women. Studies have shown that WIC mothers who were counseled by peers were more likely to initiate breastfeeding and to breastfeed longer (6-11); however, none of these programs focused on Hispanic mothers.

Another influential factor associated with a WIC mother's decision to begin and continue breastfeeding is spousal support (11-14), and again Hispanic mothers were underrepresented in these studies. A study conducted in Puerto Rico found that 92% of future fathers indicated their willingness to support exclusive breastfeeding, and this support was associated with breastfeeding knowledge and attitudes (15). Interventions to increase the father's knowledge of breastfeeding basics, management,

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and attitudes have helped the mother feel more comfortable about her infant-feeding decision (11,16-19). To date, one such intervention has been conducted among WIC fathers in Flagstaff, Arizona, in 1992 (11), but the number of minority subjects was small and the length of follow-up was short. Interventions focusing on Hispanic fathers have been conducted in Brazil (16,19), but no interventions have been conducted among Hispanic fathers in the United States.

To increase Hispanic fathers' awareness of their role in breastfeeding in the United States, a pilot Peer Dad Program was implemented in Brownsville, TX, from 2002 through 2003. The study was conducted to test the hypothesis that mothers and their partners who participated in the Peer Counseling and Peer Dad Programs would breastfeed longer than mothers who participated in the Peer Counseling Program only. We focused on breastfeeding duration rather than breastfeeding initiation because all mothers in the study initiated breastfeeding.

METHODS

General Description of the Pilot Peer Dad Program

The pilot Peer Dad Program was implemented at the Cameron County Department of Health and Human Services Mary P. Lucio WIC clinic in Brownsville, TX, from June 2002 through December 2003. A complete description of the Peer Dad Program appears elsewhere (20). Briefly, the Peer Dad Program goals were to enlist the assistance of fathers in promoting breastfeeding and to increase breastfeeding initiation and duration. The Theory of Planned Behavior, in which subjective norms, attitudes, and perceived control of the fathers (21), provided a framework for training peer dads in breastfeeding basics and the importance of being a supportive spouse. As fathers of WIC children being breastfed, the peer dads were employed to act as role models and to provide counseling and classes prenatally and postnatally to other WIC fathers whose partners may or may not have gone on to breastfeed. Counseling sessions were held individually or with their spouse in person or by telephone. An invitation was extended to the WIC fathers to attend breastfeeding classes with their spouse. The Institutional Review Boards of the Texas Department of State Health Services and the University of Texas Health Science Center at Houston approved the study.

Study Design, Eligibility, and Recruitment

WIC participants eligible for inclusion in the cohort study met several guidelines: fathers participated in the pilot Peer Dad Program and/or mothers participated in the Peer Counselor Program during the same time period; existence of a breastfeeding counseling form(s) indicating the mother had initiated breastfeeding the index child; previous registration as a breastfeeding mother and breastfed infant; current participation in the WIC program; Hispanic, with ability to speak English and/or Spanish; aged 18 years or older; and infant with no congenital defect or medical contraindication to breastfeeding. Using the Texas WIC database, breastfed infants whose mothers met the inclusion criteria were identified.

Due to extensive training of WIC staff and routine quality assurance, the WIC database has a very high level of accuracy and completeness. Peer counseling forms that included breastfeeding concerns and discussion topics were then located in the WIC records.

Questionnaires

The mother and father questionnaires used standardized questions taken from the Pregnancy Risk Assessment Monitoring System (22) and the Infant Feeding Study II (23) on index child infant information (four questions of mothers only); prenatal and postnatal care (six questions); breastfeeding knowledge, attitudes, behaviors, self-efficacy, barriers, benefits, and mediating factors (16 questions); WIC breastfeeding services (six questions); WIC Peer Dad Program, including subjective norms (12 questions of fathers only); and parent sociodemographic characteristics (14 questions). These questions evaluated the influence of The Theory of Planned Behavior constructs of maternal and paternal attitudes, subjective norms, and perceived control on breastfeeding duration (21). Questionnaires were translated into Spanish and then back translated into English by three bilingual Cameron County WIC nutritionists. The Texas Department of State Health Services and the Cameron County WIC Program Breastfeeding Coordinator, and the Texas WIC Peer Counselor Coordinator reviewed the questionnaires and affirmed their appropriateness to assess breastfeeding practices. In addition, peer counselors, peer dads, and a lactation consultant also reviewed the questionnaires for language clarity. The questionnaires were pilot tested among 10 couples and modified accordingly. Variables used in our study included sociodemographic characteristics, pregnancy and postpartum characteristics, and Peer Dad Program participation.

Systematic Approach to Data Collection

Using the Texas WIC database, lists were generated to identify eligible participants' next WIC appointment so WIC staff could approach them about participating in the study. Once participants were identified, trained WIC staff administered the questionnaires when they were notified of their WIC Program eligibility during their subsequent certification appointment or when they returned for a class appointment between July 2005 and February 2006. Maternal and paternal interviews took approximately 20 minutes to complete, and WIC mothers were interviewed by female WIC staff; WIC fathers were interviewed by male WIC staff. Attempts were made to interview male partners who did not accompany their spouse or female partner to their WIC appointment by telephone. After the interview, WIC records were abstracted for demographic, and maternal and infant health information, including breastfeeding duration. Data were entered and managed in a Microsoft Access (version 2007, 2007, Microsoft Corp, Redmond, WA) database with appropriate quality control measures.

Statistical Analyses

A total of 141 couples who participated in peer counseling and peer dad counseling (intervention group) and 141

mothers who participated in peer counseling only (control group) were projected to provide 80% study power for an odds ratio (OR) of 2.0 or greater assuming that 30% of women in the control group were still breastfeeding at 6 months. Of the 300 eligible mothers, 86 never returned to their WIC appointment, four relocated, and 10 refused to participate in the study, resulting in a final sample size of 200 mothers (67% response rate). Of these, 101 mothers and their spouses participated in peer counseling and peer dad counseling, whereas 99 mothers participated in peer counseling only. The spouses or partners of all mothers were contacted and 53 fathers in the intervention group participated (53% response rate) compared to 49 fathers in the control group (50% response rate).

Sociodemographic, pregnancy, and postpartum characteristics between intervention and control groups were presented as frequencies and differences were assessed using *P* values produced by χ^2 tests of association. Unconditional logistic regression was used to assess the association between the independent variable of participation in the Peer Dad Program and the dependent variable of continued breastfeeding past 6 months, and to determine whether the independent variables of sociodemographic characteristics, pregnancy, and postpartum characteristics or reasons for stopping breastfeeding significantly predicted the dependent variable of continued breastfeeding for 6 months or longer (24). The frequencies of independent variables were presented and the results of logistic regression were presented as ORs and 95% confidence intervals (CIs). Breastfeeding was defined as both exclusive and partial breastfeeding. Variables that differed significantly between intervention and control groups (as determined by the χ^2 tests) were assessed as confounders. However, no variables were considered confounders of the relationships with breastfeeding 6 months or longer because their addition to the model did not change the unadjusted ORs by 10% or more (25). Results were considered significant at the 0.05 level. All statistical analyses were conducted using SAS (version 9.1.3, 2007, SAS Institute Inc, Cary, NC).

RESULTS

Mothers in the intervention group were similar with regard to all sociodemographic characteristics to mothers in the control group; however, fathers in the intervention group were significantly less likely ($P=0.03$) to be born in the United States than fathers in the control group (Table 1). Both mothers and fathers tended to speak Spanish for the interview (86% of mothers and 94% of fathers), and to have been born in Mexico (74% of mothers and 56% of fathers). Table 2 shows that the only pregnancy or postpartum characteristic that differed significantly between the intervention and control groups was pre-pregnancy body mass index (BMI) ($P=0.02$). Women in the control group were more likely to have a pre-pregnancy body mass index in the normal range compared to women in the intervention group.

WIC couples who participated in the Peer Counselor Program and the Peer Dad Program tended to breastfeed longer than WIC mothers who participated in the Peer Counselor Program only (17.8% vs 25.3% breastfed <3 months, 18.8% vs 20.2% breastfed 3 to 6 months, 32.7% vs 24.2% breastfed 6 to 12 months, and 30.7% vs 30.3%

breastfed >12 months, respectively); however, this was not significant (P for trend=0.30). Table 3 presents ORs and 95% CIs for breastfeeding continuation past 6 months associated with participation in the Peer Dad Program and the significant predictors, previous breastfeeding and reasons for stopping breastfeeding. Mothers whose partners participated in the Peer Dad Program were no more likely (OR 1.44, 95% CI 0.82 to 2.54) to continue breastfeeding past 6 months than mothers whose partners did not participate in the Peer Dad Program. Women who had previously breastfed were twice as likely (OR 2.02, 95% CI 1.06 to 3.88) to breastfeed for 6 months or longer than women who had not previously breastfed. Women who reported their reasons for stopping breastfeeding as they "had difficulty nursing" (OR 0.18, 95% CI 0.08 to 0.41), their "nipples were sore, cracked, or bleeding" (OR 0.49, 95% CI 0.26 to 0.93), and they "thought they were not producing enough milk" (OR 0.40, 95% CI 0.22 to 0.71) were significantly less likely to continue breastfeeding past 6 months, whereas women who reported they "felt it was the right time to stop breastfeeding" (OR 5.03, 95% CI 2.69 to 9.41) were significantly more likely to continue breastfeeding for 6 months or longer.

DISCUSSION

Although not statistically significant, a greater percentage of women whose partners enrolled in the Peer Dad Program (63.4%) breastfed for 6 months or longer than women whose partners did not enroll in the program (54.6%) ($P=0.20$). This difference may have been more pronounced had our intervention and control groups been similar with regard to prepregnancy body mass index because women who are overweight or obese prepregnancy are less likely to breastfeed for 6 months or longer (26). The only other intervention conducted among WIC fathers used a different study design: few minority subjects (nine of 29 in the control group and 10 of 26 in the intervention group), shorter length of follow-up (3 months), and the provision of incentives (11). However, the proportion of women in the intervention group still breastfeeding past 3 months in that intervention (61.5%) was smaller than in our study (82.2%). In addition, the proportion of women in the control group still breastfeeding past 3 months in that intervention (24.1%) was much smaller than in our study (74.8%). One possible explanation for longer breastfeeding duration among women in our study compared to that intervention is an overall increased awareness of breastfeeding among intervention and control groups. An unanticipated benefit of the Peer Dad Program was that more fathers were accompanying their spouse to the WIC clinic regardless of WIC appointment categories. Perhaps the presence of male staff made WIC fathers feel more comfortable in an environment that normally serves women and children.

In agreement with other studies of this topic among low-income women, mothers in our study were more likely to initiate and continue breastfeeding past 6 months if they had previously breastfed (27-30). Our study indicated that more than 70% of mothers in both groups had previously breastfed, which is substantially higher than in the other studies. The higher rate of previous breastfeeding in our study may be due to the His-

Table 1. Comparison of sociodemographic characteristics of participants in Peer Counseling (PC) and Peer Dad (PD) programs, as reported in the Brownsville, TX, Peer Dad Program Evaluation, 2006

	Participated in PC and PD Program		Participated in PC Program		P value
	n	%	n	%	
Mother	n=101		n=99		
Mother's age					
20 to 35 y	87	86.1	83	84.0	0.65
36 to 50 y	14	13.9	16	16.0	
Mother's education level					
Less than high school	52	51.5	50	50.0	0.99
High school	31	30.7	31	32.0	
More than high school	18	17.8	18	18.0	
Mother's marital status					
Unmarried	19	18.8	28	28.0	0.11
Married	82	81.2	71	72.0	
Mother birth origin					
United States	26	25.7	27	27.3	0.81
Non-United States	75	74.3	72	71.7	
Mother spoken language at interview					
English	15	14.8	13	13.1	0.73
Spanish	86	85.2	86	86.9	
Participation in other federal assistance program					
No government assistance	46	45.5	41	41.4	0.56
Government assistance	55	54.5	58	58.6	
Mother employed after delivery					
Not employed	83	82.2	71	71.7	0.08
Employed	18	17.8	28	28.3	
Father	n=53		n=49		
Father's age					
20 to 35 y	37	72.6	38	78.0	0.56
36 to 55 y	14	27.4	11	22.0	
Missing	2		0		
Father's education level					
Less than high school	30	58.8	21	43.8	0.28
High school	12	23.5	12	27.1	
More than high school	9	17.7	14	29.1	
Missing	2		2		
Father's marital status					
Married	47	90.4	42	86.0	0.47
Unmarried	5	9.6	7	14.0	
Missing	1		0		
Father birth origin					
United States	18	34.0	27	55.1	0.03
Non-United States	35	66.0	22	42.9	
Father spoken language at interview					
English	3	5.7	3	6.1	0.92
Spanish	50	94.3	46	93.9	
Father employed after delivery					
Not Employed	0	0.0	1	2.0	—
Employed	52	100.0	46	98.0	
Missing	1		2		

panic ethnicity of the subjects, evidenced by the majority of mothers and fathers who used Spanish to complete the interview and who were born in Mexico. Previous studies, including one conducted in Brownsville, TX (31), have shown that the longer Hispanic women live in the United States, the more likely they are to adopt the US culture

and the less likely they are to initiate and to continue breastfeeding (27,31-34). Our study may have included women whose acculturation level was low, indicating they may have been more likely to have breastfed previously and to breastfeed the index child. However, when the Peer Dad analysis was adjusted for previous breast-

Table 2. Comparison of intervention and control groups for pregnancy and postpartum characteristics, among participants in the Peer Counselor (PC) and Peer Dad (PD) programs, as reported in the Brownsville, TX, Peer Dad Program Evaluation, 2006

	Participated in PC and PD Program (n=101)		Participated in PC Program Only (n=99)		P value
	n	%	n	%	
Method of delivery					
Normal	45	46.4	50	53.8	0.31
Cesarean	52	53.6	43	46.2	
Missing	4		6		
Sex of infant					
Boy	45	44.6	50	50.5	0.40
Girl	56	55.4	49	49.5	
Parity					
Nulliparous	29	28.7	30	30.3	0.81
Multiparous	72	71.3	69	69.7	
Gestational age of infant					
Preterm (<37 wks)	7	6.9	6	6.1	0.80
Full term (≥37 wks)	94	93.1	93	93.9	
Birth weight of infant					
Normal (≥2,500 g)	97	96.0	95	96.0	0.98
Low (<2,500 g)	4	4.0	4	4.0	
Prepregnancy body mass index					
<19.8	7	7.0	2	2.0	0.02
19.8-26.0	32	31.7	48	48.5	
>26.0	62	61.3	49	49.5	
Weight gain					
Insufficient	29	28.7	30	30.3	0.97
Recommended	34	33.7	33	33.3	
Excessive	38	37.6	36	36.4	
Previously breastfed					
No	22	21.8	28	28.3	0.29
Yes	79	78.2	71	71.7	
Introduction of pacifier					
No pacifier	39	38.6	46	46.5	0.28
Hospital	49	48.5	37	37.4	
Non-hospital	13	12.9	16	16.1	

feeding there was a negligible change in the OR for breastfeeding 6 months or longer.

The link between short breastfeeding duration and the reasons mothers reported stopping breastfeeding in our study, concern about insufficient milk, difficulty nursing, and sore nipples, have been reported in other studies of WIC mothers (3,4). In a national sample of WIC participants, one of the primary problems with breastfeeding reported among all mothers regardless of race/ethnicity was concern about insufficient milk (3). A statewide sample of WIC participants from Maryland found that Hispanic mothers were more likely to report perceptions of infant breast rejection than white and African-American mothers, whereas white and African-American mothers were more likely to report difficulty nursing and pain than Hispanic mothers (4). Nonetheless, Hispanic mothers were more likely to initiate and continue breastfeeding than white and African-American mothers. Another possible explanation for the higher rates of previous and current breastfeeding among Hispanics than among other racial/ethnic groups is a finding from the national sample: Hispanic mothers were more likely than African-

American mothers to note the benefits of breastfeeding, whereas African-American mothers were more likely to note the barriers to breastfeeding (3).

This study had several limitations. First, this study focused on a cross-sectional sample of WIC breastfeeding mothers and fathers and may not be representative of all WIC participants in Brownsville, TX. Second, the majority of subjects (75%) were mothers who had previous breastfeeding experience so the study was not able to compare the effect of breastfeeding among nulliparous and multiparous women. Third, many families never returned to their WIC appointment and were withdrawn from the WIC Program, which resulted in lower response rates than anticipated. Fathers were especially difficult to reach, and their response rate was much lower than the mothers. Fourth, the lower response rates led to low statistical power (24%) to detect differences based on Peer Dad Program participation. To achieve a statistically significant result for our findings we would have had to recruit 500 couples and 500 women. Fifth, it was not possible to conduct a bias analysis to determine whether the demographic characteristics of mothers and fathers

Table 3. Odds ratios (ORs) and 95% confidence intervals (CIs) for breastfeeding continuation past 6 months for participants in the Peer Counselor and Peer Dad programs and significant predictors^a of quitting, as reported in the Brownsville, TX, Peer Dad Program Evaluation, 2006

Variable	Breastfed for ≥6 mo (%)	OR	95% CI
Peer Counselor and Peer Dad program			
No	54.6	1.00	Referent
Yes	63.4	1.44	(0.82-2.54)
Previously breastfed			
No	46.0	1.00	Referent
Yes	63.3	2.02	(1.06-3.88)
Difficulty nursing			
No	66.1	1.00	Referent
Yes	25.7	0.18	(0.08-0.41)
Sore, cracked, or bleeding nipples			
No	63.7	1.00	Referent
Yes	46.3	0.49	(0.26-0.93)
Not producing enough milk			
No	68.1	1.00	Referent
Yes	45.7	0.40	(0.22-0.71)
Right time to stop breastfeeding			
No	42.1	1.00	Referent
Yes	78.5	5.03	(2.69-9.41)

^aIncludes exclusive and partial breastfeeding.

who did not participate in the study differed from the characteristics of study participants. Finally, information bias may have occurred since this study targeted couples whose children were between 1½ and 4½ years of age when the interview was conducted. As a result, mothers may have erroneously recalled their infant/child early feeding practices and hospital events, especially if they had other children since the index child. These limitations may have resulted in the lack of a significant association between participation in the Peer Dad Program and breastfeeding duration in the study.

CONCLUSIONS

Although Hispanic mothers are more likely to initiate and continue breastfeeding than white and African-American mothers (3,4), the percentage of Hispanic (37.9%) mothers who breastfeed for at least 6 months (1) has yet to reach the Healthy People 2010 goal of 50% (2). Mothers may not feel comfortable discussing their difficulties breastfeeding with their spouse; therefore, the peer dad may be able to discuss these topics with fathers to promote spousal support and to involve fathers in the care of their infants. Registered dietitians can use this information to potentially develop educational programs that target fathers as a means of increasing breastfeeding knowledge among males and increasing breastfeeding duration among mothers. WIC breastfeeding educators should provide breastfeeding counseling for the male partner either alone or in joint counseling sessions with

the mother. Our study showed no increase in breastfeeding duration associated with participation in a Peer Dad Program, perhaps due to a small sample size. Future studies are needed to properly evaluate the effectiveness of Peer Dad Programs in improving breastfeeding duration among women of all racial and ethnic groups.

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